Mawlana Bhashani Science And Technology University

Lab-Report

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Program for Round Robin scheduling

Round Robin is a CPU scheduling algorithm where each process is assigned a fixed time slot in a cyclic way.

- It is simple, easy to implement, and starvation-free as all processes get fair share of CPU.
- One of the most commonly used technique in CPU scheduling as a core.
- It is preemptive as processes are assigned CPU only for a fixed slice of time at most.
- The disadvantage of it is more overhead of context switching

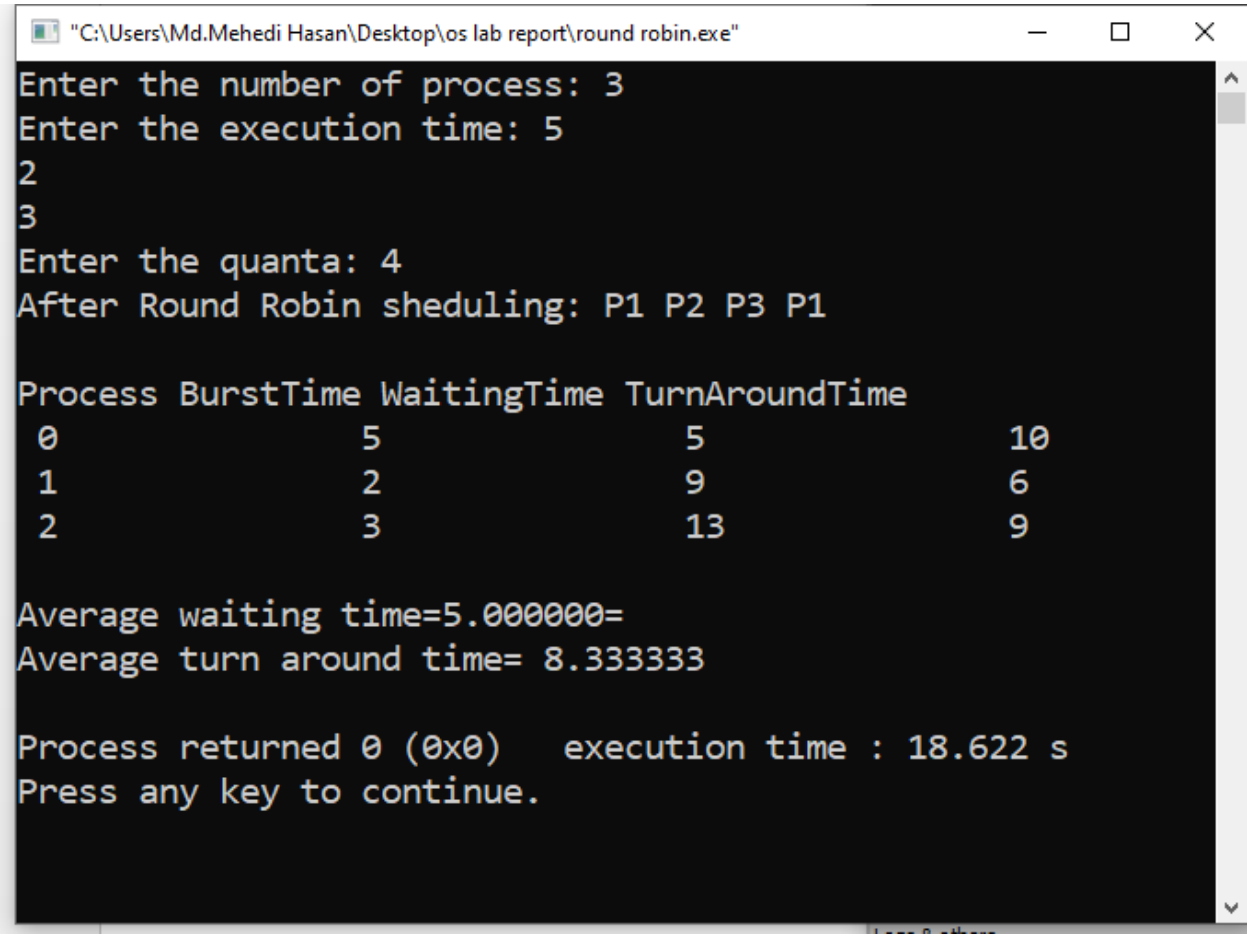
Code implementation:

```
#include<stdio.h>

int main()

{

   int n,i,k,x=0,s=0,r=0,q=0,a[30],e[30],t[30];

   float m,p=0;

   printf("Enter the number of process: ");

   scanf("%d",&n);

   printf("Enter the execution time: ");

   for(i=0; i<n; i++)

   {

      scanf("%d",&a[i]);

      e[i]=a[i];

   }

   printf("Enter the quanta: ");

   scanf("%d",&q);

   printf("After Round Robin sheduling: ");

   for(i=0; i<n; i++)

   {
```

```
    if(x<a[i])
    {
        x=a[i];
    }
}
k=x/q;
while(s<=k)
{
    for(i=0; i<n; i++)
    {
        if(a[i]>0)
        {
            if(a[i]>q)
            {
                r=r+q;
                a[i]=a[i]-q;
                printf("P%d\t",i+1);
            }
            else
            {
                r=r+a[i];
                a[i]=a[i]-q;
                printf("P%d ",i+1);
                t[i]=r;
            }
        }
    }
    s++;
}
```

```
    printf("\n\nProcess BurstTime WaitingTime TurnAroundTime\n");
    for(i=0; i<n; i++)
    {
        printf(" %d \t\t %d\t\t %d\t\t %d\t\t \n",i,e[i],x,t[i]);
        x=x+q;
    }
    m=x/n;
    printf("\nAverage waiting time=%f= ",m);
    printf("\nAverage turn around time= ");
    for(i=0; i<n; i++)
        p=p+t[i];
    p=p/n;
    printf("%f",p);
    printf("\n");
    return 0;
}
```

Output:



Discussion:

Round Robin is the preemptive process scheduling algorithm. Each process is provided a fix time to execute, it is called a quantum. Once a process is executed for a given time period, it is preempted and other process executes for a given time period. Context switching is used to save states of preempted processes.